United Nations

A/64/380

General Assembly

Distr.: General
8 October 2009

Original: English

Sixty-fourth session
Agenda items 132 and 146

Proposed programme budget for the biennium 2010-2011

Administrative and budgetary aspects of the financing of the United Nations peacekeeping operations

First progress report on the enterprise resource planning project and revised estimates under section 28A, Office of the Under-Secretary-General for Management, of the proposed programme budget for 2010-2011, and under the peacekeeping support account

Report of the Secretary-General*

Summary

The enterprise resource planning (ERP) project is the cornerstone of dramatic reform to the administrative and peacekeeping support functions of the United Nations. This global effort has been named Umoja, which means "unity" in Swahili. Umoja presents a once-in-a-generation opportunity to build and implement the processes, systems and education that will ensure not only the continued operability, but also the improved accountability and indeed the credibility of the entire Organization, from back office to field mission.

Over the past several decades, the United Nations and the environment within which it operates has evolved to a point where it is unreasonable to expect good use of funds and high-quality results without adopting processes, procedures, skills and systems that are considered minimal in the private and other public sector environments.

* The submission of the report was delayed owing to the need for extensive consultation.

09-54947 (E) 261009

Please recycle

The United Nations has become an $11.5 billion per annum operation, of which approximately $7.5 billion is allocated to peacekeeping in some of the world's most difficult environments. The responsibility is daunting enough, but is even more so when undertaken without the tools and training that the financial and humanitarian dimensions require. The challenges are no less important in the core administrative and management functions, at Headquarters and in offices away from Headquarters, the regional commissions, and other entities that share the United Nations administrative and operational functions and systems.

At present, the Organization in its entirety delivers on its mandate thanks to the dedication, expertise and hard work of its staff. But despite their enormous efforts, inefficiencies occur and opportunities are missed, mostly owing to outdated practices and inadequate availability of information. Indeed, Umoja is not so much a benefit as a necessity.

The objective of Umoja therefore, is to renew the way the United Nations manages human, financial and material resources, allowing staff to work together in a truly coordinated manner, giving managers the visibility to plan appropriately, providing stakeholders the confidence to support and endorse programmes, and enabling the Organization to deliver better on its mandates.

While the primary motivation for Umoja is based on the Organization's continued ability to deliver services, deliver them efficiently, and account for its expenditure reliably, quantifiable benefits are imperative to secure funding, and to ensure the more effective use of funds in the longer term. Therefore, the Umoja team has led thorough research of the realistic benefits and investment associated with this effort.

It is projected that, if fully funded, Umoja could deliver in the range of $134 million to $224 million in ongoing annual capacity improvements and cost recovery, and many significant qualitative benefits, including increased operational effectiveness and timeliness, improved accountability, adoption of international best practices and standards, enhanced transparency, and higher client satisfaction. It must be emphasized, however, that all benefits, both quantitative and qualitative, are only achievable if several key success factors are met and maintained. Foremost among these factors are political and financial support.

It must also be emphasized that all figures presented in the business case are estimates. While based on thorough analysis expert advice, and long experience, they are built on a number of assumptions and on existing data that are not always complete or fully reliable, owing to the limitations of current information systems. While it is reasonable to expect the benefits presented, they are potential benefits and should not be projected as savings. Nor should they be considered in the formulation of future budgets until Umoja is fully deployed and stabilized, and the effects have been accurately measured.

In the meantime, the programme has progressed as planned with the resources provided by the General Assembly in December 2008. Several key outputs had been delivered as at 31 July 2009, among them a comparative analysis of implementation strategies and scenarios, including costing models; a comprehensive analysis of benefits; and other deliverables that support the ongoing design of a "business blueprint" of the future resource management solution.

As at 31 July 2009, 28 of the project's 44 positions were encumbered and a further 16 were under recruitment. Those positions are proposed for conversion to temporary posts. At the same time, the present report includes a request for an additional 36 temporary posts. Furthermore, Umoja has contracted with systems integration services for the design phase, and for strategic advisory services, and is in the process of negotiating a contract for ERP software.

The governance structure of Umoja is providing strong leadership and guidance, and will be expanded to include additional key stakeholders from wider organizational and geographic entities.

Following determination of the preferred ERP software and subsequent analysis of the application architecture and high-level business processes, the revised implementation strategy reflects the design, building and testing of a full enterprise solution followed by phased roll-out to offices around the world.

Member States had requested options for a reduced enterprise resource planning package at lower cost. After thorough analysis, it was concluded that no shortcuts could be made without introducing unacceptable risk, increasing the longer-term cost and sacrificing most of the benefits. Nevertheless, several implementation options were analysed in order to determine the most cost-effective approach. These options fall into four major categories: (a) "IPSAS (International Public Sector Accounting Standards) first"; (b) "phased functionality"; (c) "traditional implementation"; and (d) "pilot first".

The Secretary-General recommends the "pilot first" option, which minimizes the number of deployment phases to three and reduces risk to the Organization. This option would involve a smaller-scale initial deployment to allow the system to be tested operationally in a contained environment, followed by deployment to the rest of the Organization in two phases. It is believed that this would be the most appropriate approach for the Secretariat and would avoid many of the issues that several United Nations agencies have experienced during their deployments. In addition, "pilot first" provides the fastest and least expensive path to benefit realization, and it is therefore recommended that this approach be approved and funded by the General Assembly.

Based on a comprehensive analysis of the ERP project, the resource requirements to implement the "pilot first" option through full deployment are $315,792,300 without contingency as follows: (a) $20,000,000 for 2008-2009; (b) $175,348,200 for 2010-2011; and (c) $120,444,100 for 2012-2013. While this is clearly not a "reduced option", it is in fact the most economical of all those analysed.

With this approach and funding, the design phase will be completed in the second quarter of 2010, followed immediately by the build phase, which also sees preparation for implementation, and the development and execution of a comprehensive training programme. The complete solution would then be ready by the end of 2011, and deployed to the entire organization in three major phases within two years of the first implementation — in other words, by the end of 2013.

This timetable represents a delay of one year as compared to the original plan (see A/62/510/Rev.1, para. 40, fig. II), that is explained by the delayed start and the slower execution of the preparatory and design phases, owing in turn to the reduced funding granted for 2008-2009: $20 million as opposed to the $82 million requested.

The request for additional budget as compared to the original submission (A/62/510/Rev.1) is attributable to the following factors: (a) additional internal resources (36 temporary posts plus the participation of additional subject matter experts are requested to bring the team size to a level commensurate with a project of this complexity, which was underestimated in the first instance because there was much less detailed information available at the time; (b) an increase in travel costs to support instructor-led training versus the train-the-trainer approach, the latter of which has been shown to be cheaper initially, but less effective and more expensive in the longer term, also delaying the realization of benefits; and (c) start-up operating costs (e.g., hardware, databases, tools and additional training, travel costs and support for the pilot site launch) as well as support staff for the duration of the implementation period, that were not previously included as they are strictly operating costs and not project costs, but which have now been factored in.

On the other hand, contractual service costs have been reduced, which partially offsets the increase in internal staff, while a cadre of staff who can support the system after the launch is being built, reducing dependency on high-cost consultants in the longer term.

The net effect of these changes is as follows: the "pure project" costs, comparable with those in document A/62/510/Rev.1, are now figured at $277 million as opposed to $286 million, a slight reduction. An additional $38.8 million is now included for initial (start-up) operating costs, bringing the total for the three bienniums to $315.8 million.

In conclusion, the present report shows how Umoja could impact the efficiency and effectiveness of the United Nations administrative, programme, and peacekeeping support activities, enabling the Organization to deliver improved services at reduced cost, bringing both qualitative and quantitative benefits to all stakeholders. Indeed, the report will argue that a capital investment in Umoja at the present time is in the very best interest of the United Nations and all its constituents. Although difficult in today's global economic environment, Umoja presents a unique opportunity that must be seized. Although this will be costly, choosing not to proceed would be more so.

Contents

		Page
I.	Introduction	6
II.	Benefits of Umoja	8
	A. Qualitative benefits	9
	B. Quantitative benefits	12
	C. Conditions of benefit realization	17
	D. Timing of benefits	17
III.	Progress	18
	A. Design phase	18
	B. Assessment of organizational arrangements (Umoja governance)	20
	C. Project staffing	21
	D. Contracts	21
	E. Change management	21
IV.	Implementation strategy and resource requirements	22
	A. Background	23
	B. Analysis of cost drivers	24
	C. Implementation options	25
	D. Resource requirements	27
	E. Contingency resources	34
V.	Lessons learned	35
	A. Integrated Management Information System	35
	B. United Nations system	36
VI.	Summary of resource requirements for the enterprise systems for the United Nations Secretariat worldwide and request for action by the General Assembly	36
	A. Summary of resource requirements	36
	B. Actions to be taken by the General Assembly	37
Annexes		
I.	Expected benefits of the enterprise resource planning project	38
II.	Objectives for the biennium, expected accomplishments, indicators of achievement and performance measures	43
III.	Enterprise resource planning project: organizational structure and post distribution for the biennium 2010-2011	45

I. Introduction

1. The enterprise resource planning (ERP) project is the cornerstone of a United Nations-wide effort to bring groundbreaking reform to general administrative functions and overall resource management of the entire Secretariat,[1] including peacekeeping operations. This global effort has been named Umoja, which means "unity" in Swahili. As the name suggests, Umoja will unite the many support and administrative entities throughout the United Nations Secretariat through revised common processes and practices, shared online data, renewed information management technology and training for staff on all of the above. All elements will be based on proven leading practices.

2. The raison d'être and primary benefit of Umoja is very simple: in this fast-changing world, the United Nations cannot continue to operate and credibly account for itself without it. Indeed, Umoja is not so much a benefit as a necessity.

3. The United Nations, its operating environment, the work of the Organization, the scale of humanitarian responsibility and the size of the budget entrusted to the Organization, have all evolved significantly in recent years. Such has been the evolution on these multiple axes, that the point has been reached where it is unreasonable to run the Organization and expect the best use of funds and high-quality results, without the renewal that will bring processes, procedures, skills and systems up to levels that are considered minimal in the private and other public sector environments. This is true of the full range of administrative, managerial and operational support functions, including peacekeeping operations, the latter accounting for 65 per cent of the Organization's budget.

4. The importance to peacekeeping notwithstanding, similar conditions, and therefore the same need, is experienced in administrative and management functions across the Organization — at Headquarters, offices away from Headquarters, the regional commissions and specialized programmes,[2] some of which also operate in the field. It is not because their budgets are smaller that the situation is any less important. Whether at Headquarters or in the smallest field office, United Nations personnel face the same issues and run the same risks owing to the lack of up-to-date information, outdated practices and insufficient training.

5. The objective of Umoja, therefore, is to renew completely the way the United Nations manages human, financial and material resources, bringing the Organization up to accepted common standards commensurate with the size and nature of its operations. Through analysis of current requirements, design of new processes and solutions, implementation of a single global information system and concerted education of staff, Umoja will allow all members of the Organization to work together in a truly coordinated manner, giving managers the visibility to plan appropriately, providing stakeholders the confidence to support and endorse programmes, and enabling the Organization to deliver on its mandates, which include some of the most challenging humanitarian endeavours ever pursued. Certainly, Umoja presents a once-in-a-generation opportunity to equip the

[1] Umoja's scope encompasses all entities of the United Nations Secretariat as outlined in the Secretary-General's bulletin ST/SGB/1997/5, entitled "Organization of the Secretariat of the United Nations".

[2] The United Nations Environment Programme and the United Nations Human Settlements Programme (UN-Habitat) are part of the scope of Umoja.

Organization with twenty-first century techniques, tools, training and technology and to modernize the United Nations service delivery to meet increasing demands under increasing financial pressure.

6. In order to meet the mandate of Member States to minimize the customization of the ERP software, the Secretariat's business practices must change, as many of its current methods are incompatible with accepted best practices. Furthermore, other United Nations system agencies that have implemented ERP have, without exception, warned the Secretariat not to treat Umoja as a purely technological change effort, replacing computer systems and automating existing processes. Rather, they have strongly advised seizing the opportunity to change business practices[3] before the solution is configured. If this opportunity is missed, benefits will not be fully realized, and the cost of implementation will be higher.

7. Accordingly, Umoja is differentiated from previous comparable United Nations initiatives, such as the Integrated Management Information System (IMIS), which mostly enabled existing processes through technology, without making substantial changes to all fundamental practices. Indeed, Umoja is more than a project: it is a movement of continuous reform and improvement, affecting the Organization from back-office administration to direct support of field operations.

8. Given that ERP systems by definition integrate processes, people, and policy within a rationalized technological platform, Umoja is well positioned to facilitate and even realize other United Nations administrative reform efforts. The Umoja solution is the logical place where these reform visions can be integrated with one another and become reality in the daily work of the United Nations. Bringing outdated policies and processes in line with accepted leading practice and enabling those reforms with the appropriate use of improved technology is the core of Umoja's mission and an integral part of supporting other reform efforts throughout the Organization. Thus, as a reform driver and facilitator, Umoja will improve the Organization's accountability and at the same time diminish the risks that the Organization runs every day, for example, that of providing erroneous information, as well as reduced operability, owing to the failure of systems or processes.[4]

9. Umoja has its roots in the sixtieth session of the General Assembly, during which the Assembly decided, in its resolution 60/283, "to replace the Integrated Management Information System with a next-generation enterprise resource planning system or other comparable system".[5] This paved the way for process and technology enhancements.

10. Subsequently, the Secretary-General presented a proposal (see A/62/510/Rev.1) for the phased implementation and deployment of an ERP solution throughout the United Nations Secretariat, including offices away from Headquarters, the regional commissions, peacekeeping and political missions and other field operations. In December 2008, in its resolution 63/262, the General Assembly approved the proposed governance framework of the enterprise resource

[3] Including ensuring that the majority of processes are rationalized and inefficiencies are ironed out, changing the rules and regulations necessary, and changing the mind-set and habits of the user community.

[4] Further discussed in section II.B on qualitative benefits.

[5] Note that Umoja will ultimately replace up to several hundred of the existing 500-plus administration information systems in use, not only the 8 instances of IMIS.

planning project, approved the amount of $20 million for the implementation of the enterprise resource planning system, and authorized the Secretary-General to establish a multi-year special account to record income and expenditures for this project.

11. In the same resolution, the Assembly further requested the Secretary-General to submit a report at the main part of its sixty-fourth session, which includes, inter alia: (a) an updated business case; (b) an assessment of the organizational arrangements; (c) options for a reduced enterprise resource planning package at lower cost; and (d) a revised enterprise resource planning project implementation plan and updated budget.

12. The present report addresses those requests, and in particular shows how Umoja could impact the efficiency and effectiveness of the United Nations administrative, programme and peacekeeping support activities, enabling the Organization to deliver improved services at reduced cost, bringing both qualitative and quantitative benefits to all stakeholders. Indeed, the report argues that a capital investment in Umoja is in the very best interest of the United Nations and all its constituents.

13. The report builds on previous reports that have advocated for substantial change in the administrative and support services of the organization, and provides more refined strategy, planning, budgeting and benefit projections based on considerable consultation and analysis. It also underlines the urgency for change, and the opportunity now open, supported not least by a group of senior management that share a vision and a drive that is rare, and yet so vital to the success of this fundamental and essential change initiative.

14. As the formal design process started in May 2009 (see sect. III.A below) and the deadline for the submission of the present report was July, the Umoja team, with assistance from a systems integrator,[6] undertook an expedited effort to produce initial estimates concerning implementation scenarios, costs and benefits. The results are presented in the report. If necessary, the exercise will be taken to a greater level of detail and precision as more data become available through 2009 and into early 2010.

II. Benefits of Umoja

15. The Umoja team has consulted widely to identify, quantify and validate the major benefits that could derive from ERP implementation, including process re-engineering, application of best practices and training. Consultations have drawn on the knowledge of hundreds of United Nations staff members (referred to as subject matter experts[7]) across departments, missions and locations, and a core team of project members, which includes staff with experience from all corners of the Organization. This process, combined with extensive data collection, revealed a wide range of the Organization's inefficiencies and "pain points". Significant qualitative and quantitative benefits are anticipated.

[6] Consulting firm specializing in organizational transformation and in the design, building and implementation of ERP systems.

[7] Staff members recognized as leading practitioners in specific areas of the Organization.

16. These qualitative and quantitative benefits make up the business case that justifies the investment in Umoja. At the time of writing of the present report, analysis confirms that potential benefits fully support the implementation of the project, and shows that a positive return on investment will begin to show after complete deployment and a minimum one-year stabilization period. It should be noted that the business case will continue to evolve as more information and analysis become available.

17. It is also worth noting that, while the qualitative and quantitative benefits are presented by functional area[8] in the report, the design of the solution will proceed based on a process approach that cuts across these areas. Umoja presents an opportunity to reduce the "siloed" approach to administration that the Organization has traditionally taken, which in itself will contribute to improved efficiency.

18. The benefit analysis for the business case followed a structured methodology:

(a) A programme of consultative visits in the first quarter of 2009 to multiple offices away from Headquarters, the regional commissions and field missions was undertaken to document and validate "pain points", opportunities and issues with current business processes;

(b) Extensive user validation pre-workshops and meetings were conducted at Headquarters to confirm opportunities and obtain initial metrics for quantitative benefits. Subsequent workshops, with participation of over 220 subject matter experts from many parts of the Secretariat, provided revalidation in June 2009. Opportunities for improvements were documented, as were key enablers, risks and barriers (such as policy, people, process or technology change). Quantitative benefits and assumptions were derived with participants;

(c) A data-collection exercise was conducted, which consisted of data extraction of procurement, financial and human resources information from current United Nations information systems and documentation. Where information was weak or not available, surveys were conducted. Surveys also served in some areas for validation;

(d) Consultants provided cross-checking and industry benchmarks throughout, which were also presented during workshops and meetings with staff members;

(e) Extensive validation meetings were held with the Umoja Steering Committee members and other stakeholders.

A. Qualitative benefits

19. As discussed in the introduction to the report, the primary "benefit" of Umoja is in fact its raison d'être: to reinforce the United Nations continued operability, accountability and credibility.

20. Potential qualitative benefits have already been described in section III.B of the report of the Secretary-General on enterprise systems (A/62/510/Rev.1), and remain compelling reasons to implement an ERP solution. These include: increased

[8] The major functional areas are: (a) finance, (b) supply chain/procurement/logistics, (c) human resources management, and (d) central support services.

operational effectiveness and timeliness, improved accountability, adoption of international best practices and standards, enhanced transparency, higher client satisfaction, and multiple process improvements.

21. In particular, Umoja will provide better internal controls across the broad range of financial, procurement and staffing processes. It will promote consistency and transparency in the application of rules and operating procedures in all administrative disciplines throughout the organization. The many productivity and efficiency gains result in providing more timely and reliable services to users including Member States, donors and programme managers. Moreover, it is typical that the introduction of an ERP system results in a high degree of professional development of staff. In turn, this further increases efficiency and effectiveness and can facilitate greater mobility of human resources throughout the Organization.

22. A major qualitative benefit is improved transparency. Existing non-integrated systems and manual processes make achieving transparency difficult. Reporting on outcomes of a programme or project often involves arduous manual data collection lacking the accuracy and timeliness that stakeholders require. With a single information repository, the solution will provide markedly improved capabilities for timely reporting to Member States and senior management on expenditure, commitments and project status. The Organization's reputation and credibility will be enhanced by qualitative improvements in information, analysis and informed decision-making.

23. Many specific qualitative benefits within the functional areas have been identified. In human resources management, Umoja will facilitate geographic integration of all human resources, including local field staff, providing a single, reliable source of data for all personnel, and allowing for the seamless processing of transfer/assignment or movements between duty stations, particularly to critical areas in peacekeeping and field missions. Umoja will also integrate human resources, finance and payroll functions under a shared system that includes field operations. Accurate, easy and on-demand reporting also becomes a reality, such as for the report of the Secretary-General on the composition of the Secretariat.[9] The solution will enable staff members to access their own human resources data and permit staff members and managers to monitor the status of various human resources-related actions in real time. Reduced cycle times for on-boarding, entitlement processing and contract extension; self-service for staff and managers; and comprehensive time and absence planning, recording and reporting are all additional qualitative benefits that will increase the satisfaction of staff and managers.

24. In the finance area, Umoja will enable compliance with International Public Sector Accounting Standards (IPSAS);[10] increase transparency with Member States and donors through faster, more accurate reporting; increase staff member

[9] Some agencies, with their ERP systems, provide complete staff composition information to their managers as part of the "management dashboard", an online feature of their information portals. Thus, all staffing statistics (e.g., nationality, gender, age, grade and location breakdown) are available immediately and are updated every few hours with live data. The Secretariat produces this report once a year.

[10] Umoja is one of the primary enablers to achieve compliance with the International Public Sector Accounting Standards; others include changes to policies and training.

satisfaction with administrative processes; and improve the ability for the United Nations common system to function as one United Nations.

25. In the functional area of supply chain,[11] Umoja will improve the visibility of service delivery, and ensure that it is better directed at mandate and programme outcomes, by providing direct access to the operational status of particular goods and services. The solution will enhance the Organization's credibility and reputation by providing consistency in specifications and timely verification of items received from Member States and vendors. It will significantly improve operational performance by providing reliable information on item locations and expected arrivals and employ automated compliance controls for external standards on air safety, dangerous cargo, medical equipment and environmental protection. Management decision-making will be strengthened by real-time information on enterprise-wide inventory levels, logistic support plans for programmes and operations and enhanced capacity for market surveys. More closely integrating supply chain planning and logistics with finance could lead to more timely substantiation of liabilities related to contingent-owned equipment and reimbursements.

26. Central support services will also benefit from the global integration of resources. The potential to increase sales and improve cost recovery of services has been identified, along with the opportunity to increase customer satisfaction and welfare of staff. Compliance with policies regarding safety and security of our staff members will also improve, especially as relates to travel.

27. Finally, Umoja is essential to risk management and the avoidance of operational failure. The transactional information that keeps the Organization running today is stored on multiple, diverse systems, the principal components of which are protected and could be reinstated within reasonable time frames, with minimal loss of data, for example, in the case of fire in a central computer installation. However, not every information system benefits from this kind of feature. On the other hand, as ERP systems are interconnected globally, and data can be replicated in real time across multiple operational and recovery locations, the vast majority of the Organization's operational information would be stored in such a manner as to allow almost instantaneous and complete data recovery from a catastrophic event in any given location. In fact, users in other locations might never be aware of any break in service. Correctly deployed and implemented, an ERP platform provides inherent and reliable business continuity.

28. While there is no doubt that the financial benefits of Umoja will more than offset the cost, the qualitative benefits alone fully justify the effort and expense. It is simply too difficult and therefore too risky to manage effectively an organization of the size, geographic distribution and complexity of the United Nations Secretariat and its field operations with anything less than a fully fledged ERP solution, based on substantial process re-engineering and cultural change. Staff and managers alike have done their utmost with the administrative tools available to them today, but an Organization with so many demanding, growing and diverse mandates cannot continue to conduct business as usual.

[11] Includes procurement and logistics.

B. Quantitative benefits

29. Although implementing Umoja will require a significant investment, thorough analysis has revealed many areas in which the United Nations Secretariat will reap quantitative benefits as a result of refining business processes, vastly improving the quality and availability of information, reducing manual effort, and building staff skills. The most significant of these benefits in each of the functional areas are outlined below; detailed information is available in annex I.

30. It should be noted that all the figures presented in the business case are estimates. The benefits are based on assumptions that, while valid today, may change several years from now. In addition, the benefits are calculated on the basis of existing data that are not always complete or fully reliable, precisely because the United Nations does not currently have an ERP system to provide access to timely, global and accurate information. The potential benefits shown here should not be seen as savings and should not be considered in the formulation of future budgets. Any reduction should only be contemplated after full deployment and stabilization of the new system, and the subsequent analysis and confirmation of benefits. Achieving these benefits is based on several important conditions, including full funding of the implementation scenario recommended in the present report, the continued involvement and support of all stakeholders, and the continued good governance that has been afforded so far (see sect. III.B).

Table 1
Summary of potential annual quantitative benefits, by functional area
(Millions of United States dollars)

Component	*Low-range estimate*	*High-range estimate*
Supply chain/procurement/logistics	49.2	74.7
Technology and data management	34.1	59.3
Human resources	24.2	44.1
Central support services	20.2	34.9
Finance	6.2	10.5
Total	**133.9**	**223.5**

31. It is estimated conservatively that, provided that several key success factors are met and maintained (see sect. II.C below), Umoja could deliver in the range of $133.9 million to $223.5 million in overall quantitative benefits (table 1),[12] following successful implementation of Umoja, and after complete global deployment and stabilization.[13]

[12] See annex I for a detailed breakdown of all quantitative benefits, by area.

[13] Stabilization periods are known to last a minimum of one year and occur for each phase of deployment as well as for the Organization as a whole. During stabilization, resource requirements may increase rather than decrease owing to the fundamental changes in practice that need to be absorbed by staff, as well as the fine-tuning of the information system. Qualitative benefits may be felt during stabilization, but quantitative benefits are not generally realized or recognized until afterwards.

32. It should be noted that the values contained in table 1 above consist of both productivity and efficiency gains. Productivity measures output per unit of labour: by eliminating or reducing time currently spent on administrative tasks, opportunities will be created for United Nations staff to focus on more value-added activities across the Organization. Efficiency is a measure of how well inputs are converted to outputs and can be measured as the reduction in cost for the delivery of the same service at the same level of quality.

33. Consultations and workshop outcomes indicate that significant productivity gains can be made. A major area for productivity improvement is the reduction of manual processes. In some cases, manual processes have flourished to compensate for the lack of optimal processes, systems and technology. The processes are characterized by long cycle times and are further burdened with paper-based and sometimes valueless approval chains. Furthermore, paper documents are often the source of trusted information, casting doubt on the reliability of data existing in electronic systems. Most duty stations, and many organizational units within duty stations, contain their own stand-alone finance, human resources, supply chain, central support services and information technology services. Thus, the Organization maintains multiple non-interconnected management information systems, databases and spreadsheets, which can contain contradictory information, requiring manual checking and reconciliation before information can be verified and reported on (information redundancy). In addition, work in the areas is highly localized, and functions existing elsewhere are duplicated (organizational redundancy). Isolated operations over many years have caused the development of non-uniform ways of executing the same functions (organizational heterogeneity).

34. The productivity gains set out in the present report represent potential to redirect resources towards higher priority tasks and do not suggest a net decrease in posts or savings in staff costs. The resources would be released from manual low-value tasks, which compensate for gaps and other limitations in current processes and supporting systems. The priority and new tasks add value to the quality and output of the organization for the benefit of all stakeholders.

35. A number of key issues identified by stakeholders in the consultations and workshops also indicated that there are considerable opportunities for the United Nations to improve the efficiency of its operations. These efficiency gains will be derived primarily from providing employees with greater access to accurate and timely data, better leveraging economies of scale throughout the Organization, reducing unnecessary costs of goods and services and capturing opportunities for income-generating activities.

Benefits in supply chain/procurement/logistics

36. A significant portion of the supply chain benefit stems from increasing the accuracy of demand forecasts, which is estimated to yield benefits of $12.2 million to $14.3 million. Currently, the lack of data on consumption has had an impact on the ability to forecast demand accurately. With Umoja, the United Nations will be able to forecast consumption more accurately to reduce demand variability and streamline inventory and procurement functions.

37. There is also an estimated $10 million to $15 million to be gained from increasing the accuracy of asset holdings. The current low level of accuracy has partly resulted in surplus inventory. Umoja will deliver the ability to have a complete and

real-time picture of items in various locations, which will enable the Organization to establish the most economical reorder points and minimize surpluses and stock-outs. Additionally, $20 million to $30 million is the estimated benefit from reducing the volume of consumable assets that reach expiration prior to use through increased visibility, efficient warehousing and responsive safety stock management.

38. Moreover, as outlined in annex I, the process to raise requisitions will be improved with the implementation of automated catalogues and the monitoring of contract draw-down, even considering the time necessary to manage automated catalogues. Requisitioners and buyers will spend less time transforming requisitions into solicitation documents; transforming solicitation responses to contracts; clarifying issues, monitoring status and responding to other queries for a purchase order; and printing, filing and archiving key documents as auditable records for each procurement case. Lastly, a reduction of inventory carrying costs is anticipated. These add to further supply chain benefits estimated at $7.0 million to $15.4 million.

Benefits in technology and data management

39. The primary efficiency benefit in the technology area relates to decommissioning systems that will be replaced as a result of the implementation of Umoja. Of the approximately 1,400 systems identified in recent surveys, more than 500 have been developed to serve specific administrative needs. In many cases, these systems support or track paper-based processes and propagate duplicate and inconsistent data. As part of the process, documents are frequently printed from these systems, manually routed, photocopied, filed and the information re-entered into other systems, incurring associated costs. By replacing 60 to 100 per cent of these systems, it is estimated that benefits will be in the range of $34.1 million to $59.3 million in reduced support costs.

40. Another major productivity benefit in the technology area derives from the improved data aggregation capacity provided by Umoja, which accrues over and above the productivity benefits in each of the functional areas. Currently, data resides in many disparate applications and databases that are not integrated or interfaced with other applications. Considerable time and effort is expended across the Organization accessing, manipulating and aggregating data to meet reporting requirements and to support decision-making. To quantify this benefit, benchmarks were taken from recognized sources[14] based on studies of other ERP system implementations. To be conservative, this benefit estimation was limited[15] to

[14] Benchmark sources utilized in technology benefits: SAP Value Engineering case studies of SAP implementation clients over the past three years; America's SAP Users Group annual governance studies of 100 implementations each year since 2005; Gartner and Forrester case studies and published white papers and opinions and Harvard business case studies.

[15] First, the benchmarks (2-4 per cent of turnover) were reduced by 75 per cent to account for the uniqueness of the United Nations system. Second, whereas the baseline for the calculation would normally be the total operating budget of the Organization (approximately $10.3 billion), the figure was limited to $1.275 billion under Common support services (part VIII and extrabudgetary): $827 million; General Assembly and Economic and Social Council affairs and conference management: $662 million; Internal oversight: $37 million; Jointly financed administrative activities: $112 million; Safety and security: $207 million. These values have been reduced by 50 per cent to produce an annual value of $922.5 million. Plus the following annual budget elements of the support account for peacekeeping operations of $294 million and the United Nations Logistics Base at Brindisi $58 million, for a total baseline value of $1,275 million.

0.5-1.0 per cent of a baseline amount spent of $1.275 billion, giving an estimated benefit range of $6.4 million to $12.8 million.

41. Additional technology benefits totalling $1.6 million to $3.0 million, detailed in annex I, are related to the reduction of: time associated with fixing errors and aligning data; information technology resources associated with report filter changes to avoid bad data; information technology resources associated with the continual cleansing of data; and the number of reporting databases, programmes and service requests.

Benefits in human resources management

42. In the human resources management area, it is important to note that there are currently a number of human resources reform initiatives under way, independent of Umoja, and the benefits expressed in the present report further build upon those currently being implemented. It has been determined that there is potential to achieve notable productivity gains, mostly through the use of self-service and process automation. The most significant example is expedited processing of entitlements, which should yield $11.8 million to $23.6 million in benefits. The reduction of much of the filing and storage needs is estimated to derive between $3.8 million and $7.6 million of full-time equivalent[16] benefit. An additional productivity benefit would be realized by fully integrating human resources management and payroll for local staff in the field, which is estimated to yield $3.7 million to $6.2 million in benefits.

43. A reduction of 40-60 per cent in work effort required to produce Organization-wide reports is also expected, worth an estimated $1.4 million to $2.1 million, by freeing up staff time from administrative reports to additional, value-added reports and support for workforce planning and operations.

44. In addition, benefits on the order of $3.5 million to $4.6 million can be expected from redeploying staff assigned to on-boarding and initial appointment; eliminating the need for IMIS transfer script processing when staff members move between duty stations; and eliminating the need to print, copy, mail and store multiple copies of each personnel action report (see annex I).

Benefits in central support services

45. In the area of central support services, decreasing the amount of time spent by travellers on travel-related activities is estimated to yield productivity benefits of $16.7 million to $27.9 million. Currently, the steps in the travel process are not integrated, requiring travellers to interact manually with all parties in the process. With an integrated process, self-service and proper access to information by travellers, the process time could decrease by a factor of 30-50 per cent. There are other benefits in travel, such as increasing compliance with security clearance through an automated process, that are not easily expressed in monetary terms but have a positive impact on the safety and security of travellers.

46. Moreover, central support services areas are expected to contribute efficiency gains of $3.5 million to $7.0 million. Umoja would provide strategic information (e.g., timely and accurate information on the volume of products sold and revenue

[16] The equivalent effort of one staff member working over a given period. In this report, the period is one year.

generated by products) and support more efficient processes resulting in more opportunities for the United Nations to increase gross sales from activities related to services to the public and staff on a revenue-producing or cost-recovery basis, which is based on around 10-20 per cent increase of annual gross sales.

Benefits in finance

47. Productivity improvements in finance are shared among six areas where the processes will be significantly improved with Umoja. Among them, it is estimated that, through implementing a staff self-service portal and streamlining travel policies,[17] there could be a reduction in the time required to process travel accounts payable by 20-30 per cent, resulting in a benefit of $2.1 million to $3.1 million. This improvement will leverage the current efforts of the Organization in this area.

48. The introduction of business-to-business connectivity and web services is anticipated to reduce the time required to process commercial accounts payable by 10-20 per cent, for a benefit of $1.4 million to $2.8 million. Additionally, Umoja's configuration will permit the use of system business rules to automatically match purchase orders to receipt, goods and services inspection and invoice, therefore streamlining and expediting the commercial claims payment cycle.

49. The steps required to process inter-office vouchers is now overly time-consuming, owing primarily to the lack of integration of existing systems. It is estimated that the improvements that will be made will have a positive impact on both the internal (inter-office) and external (inter-agency) vouchers, reducing the effort by 50-75 per cent and 25-40 per cent, respectively. A single instance of an ERP and Umoja business-to-business connectivity and web services, respectively, will improve the settlement process within the Secretariat and with United Nations system agencies, funds, and programmes for transactions conducted on the basis of financial authorizations.[18] The total benefit related to the improvements in voucher processing is estimated at $1.5 million to $2.2 million.

50. Year-end closing also consumes a significant amount of effort across the finance services owing in part to the large number of manual journal vouchers required to close the books correctly. Umoja will reduce the volume of manual journal vouchers required and allow the processing of consolidating entries to occur in a more timely manner, shortening the time and effort required to perform the year-end close. It will also enable global monthly closing. The reduction in effort required for the year-end close is conservatively estimated at 10-20 per cent, for a benefit of $0.5 million to $1.0 million.

51. Additional benefits are expected from reducing efforts for the budget review process, thanks to the availability of up-to-date costs and indicators. The integration of supply chain, contract management and human resources data; automated workflow; and the leverage of uninvested funds owing to improved accuracy of

[17] This assumes that travel authorizations will be certified and approved; however, travel claims would be based on staff member attestation of travel in accordance with itinerary, building on the Travel Claims Portal initiative. Umoja will further streamline processes and related travel rules, if needed.

[18] Other United Nations system agencies have reported this benefit after implementing ERP. Financial transfer interfaces between ERP systems are relatively simple and low cost to set up and maintain.

global cash-flow projections, also contribute to benefits that together total $0.7 million to $1.3 million (see annex I).

C. Conditions of benefit realization

52. Achieving qualitative and quantitative benefits of this order will require at least two major conditions to be satisfied. First, the continued and active support of all stakeholders must be maintained. This support includes: (a) the commitment and open-mindedness of all stakeholders and staff to changes in roles, structure, working methods and processes; (b) full and adequate financing that includes sufficient contingency funds, and is not granted piecemeal, leveraging the multi-year special account already approved by the General Assembly (see resolution 63/262, sect. II, para. 25); (c) continued senior executive support in helping to meet the significant resource requirements for the project such as ensuring the participation of vital subject matter experts in Umoja activities and allowing the temporary assignment of staff to the project, as well as in expediting the administrative procedures to provide the resources for the project.

53. The second major condition for benefit realization is the respect of a number of known good practices, for example: (a) early and effective communication with the entire Organization to create a shared understanding of the change process and to solicit the support of all staff; (b) the involvement of managers and staff in design, building and testing activities; (c) strict quality assurance of all deliverables, including proactive oversight and solid mechanism for risk identification and mitigation, (d) the timely provision of decisions by the Steering Committee and other persons or entities; (e) the transfer of technical and systems knowledge from specialist external resources to United Nations staff; and, very importantly, (f) effective and ongoing user education and training, not only in the use of information systems, but in new techniques, processes, standards and even attitudes.

D. Timing of benefits

54. As noted, it is estimated that Umoja has the potential to deliver $134 million to $224 million in benefits to the Organization through streamlining processes, better managing all resources, enhancing technology and simply improving the way tasks are performed. With the full support of Member States and the Secretariat, it is expected that implementation costs for Umoja would represent only a fraction of the return achieved in the long term. However, it should be noted that while some qualitative benefits will occur immediately at the first deployment (e.g., transparency of information and faster processing times) the quantitative benefits will be felt only well after full deployment and stabilization and will accrue gradually rather than instantaneously at a given point in time.

55. Although quantitative benefits are significant, they should not overshadow the real qualitative benefits also to be realized through administrative reform, process re-engineering, education and training and modern, globally integrated technology that will enable a more streamlined, cost-effective, agile and accountable United Nations, as argued above. The objectives and measures of achievement for the biennium are summarized in annex II.

III. Progress

56. The Secretary-General had requested $82 million for the biennium 2008-2009 (later revised to $43 million for 2009 and reduced to $37 million without contingency funding by the Advisory Committee on Administrative and Budgetary Questions). In its resolution 63/262, the General Assembly made $20 million available to Umoja. The Umoja team acted swiftly on this mandate, tailoring the workplan for 2009 to match the level of funding available.

57. To provide context, an ERP project is typically made up of four major phases: (a) preparation[19] (this phase is now complete for Umoja), (b) design,[20] (c) build,[21] and (d) deployment,[22] which itself is performed in several phases (or "waves"). At the time of writing, Umoja is in the middle of the design phase, and developing the future business processes in detail, with participation across the Organization. In addition to describing progress on the design phase, the present section of the report provides an assessment of the organizational arrangements to date, updates on staffing and contracts and an overview of what has been achieved in change management as well as what that strategy entails.

A. Design phase

58. The project is running behind its previously released timeline (see A/63/487 and Corr.1 and 2, annex IX) by up to 40 per cent, owing to the lower level of funding noted above. The design phase was originally planned for completion by 15 January 2010, but will likely finish in the second quarter of 2010, after which the build phase can commence.

59. Prior to the adoption of General Assembly resolution 63/262, an interim skeleton team was put in place to undertake preparatory activities under an ad hoc arrangement, drawing on the limited budgetary discretion of the Secretary-General approved by the Assembly in section III of its resolution 60/283. The substantive focus of that team was the analysis of current United Nations business processes as well as the identification of opportunities for improvement. This entailed engaging internal stakeholders widely in consultations on organizational requirements, and documenting and validating current business processes. These activities laid the foundations for the design phase.

---

[19] Preparation: during which a team is formed, the governance established, service providers and tools selected, operational requirements collected and analysed, opportunities for improvement collected and evaluated, document existing business processes and systems, and outreach to the entire organization is begun.

[20] Design: during which the future solution is thoroughly documented in the form of process and data maps; the technical architecture is determined; the change to the organization's workflows, roles and responsibilities is measured and documented; and the planning for building and deploying the solution is developed.

[21] Build: during which the solution is configured in the target software, the solution is extensively tested, the technical infrastructure is implemented, and the user community is trained.

[22] Deployment: during which the organization transitions from using old systems and working methods, to using new ones. Deployment also includes a period of stabilization of a minimum of one year, during which user and technical support is more intense and any errors in the solution are resolved.

60. The design phase began in May 2009 and was projected to run for up to 12 months, depending on the funding available in early 2010. This phase determines and documents exactly how the United Nations will improve its working methods, and considers how it can best utilize an ERP system to optimize and support the Organization's reformed practices and processes.[23] The design phase also delivers the technical design elements, as well as a detailed plan for subsequent phases of the project.

61. Several key outputs had been delivered as at 31 July 2009, including the finalized current process documentation; an inventory of existing systems; documentation of results and conclusions from high-level design workshops, which involved over 220 subject matter experts from key offices, duty stations and missions; costing models for different implementation scenarios; a comparative analysis of implementation strategies and scenarios; and a comprehensive business case.

62. These deliverables continue to be refined and others produced as design activities progress through 2009. Key deliverables expected by the end of the design phase include a data and database file structure; a future application architecture model; a future ("to-be") business blueprint; a fit-gap analysis between future state requirements and software functionality; a list of required modifications to legacy systems (for interfaces and conversions); a complete list of design elements, including the future reports, interfaces, conversions and enhancements that the system will require; a list of potential changes to regulations, rules, policies and procedures; documentation of requirements for data conversion and data migration; documentation of requirements for the user access portal; documentation of requirements for security and data protection; a testing strategy, including requirements for testing tools; a support plan (user and technical); and a documented training programme. It should be noted that the accomplishment of these tasks continues to require a major effort on the part of the Umoja team, as well as significant participation and assistance from the broader Organization. The success of Umoja depends on the engagement of a wide range of staff members, not just the core team.

63. As noted earlier, several related initiatives are being implemented concurrently with Umoja within the United Nations Secretariat and missions, including: IPSAS implementation, the talent management system (to help find, attract, develop and retain staff); Lean Six Sigma (non-systems process improvement), enterprise content management (ECM) (to organize and manage documents and other information in a variety of media, such as documents, website, e-mail, picture and video); customer relationship management (CRM) (to manage and monitor a large array of day-to-day services provided); a fuel management system (to manage fuel resources in peacekeeping missions); and a rations management system (to manage food rations for peacekeeping troops). Throughout the design phase and beyond, the Umoja team will continue to work closely with the various project teams to avoid duplication of effort and ensure harmonization of processes and platforms.

[23] Note that design is being conducted in close coordination with the IPSAS implementation team, to ensure that IPSAS fundamentals and capabilities are built into the new solution. (IPSAS requirements were taken into account as far back as ERP software selection.)

B. Assessment of organizational arrangements (Umoja governance)

64. The governance structure of Umoja is described in annex VI to the report of the Advisory Committee on Administrative and Budgetary Questions (A/63/487 and Corr.1 and 2). The main decision-making body on policy issues is the Umoja Steering Committee. The Steering Committee consists of the Under-Secretary-General and Assistant Secretary-General for Field Support; the Assistant Secretary-General, Chief Information Technology Officer; the Assistant Secretary-General for Human Resources Management; the Assistant Secretary-General of the Office of Programme Planning, Budget and Accounts, Controller; the Assistant Secretary-General for Central Support Services; the Deputy Director General of the United Nations Office at Vienna; and a representative from a United Nations field mission, and is chaired by the Under-Secretary-General for Management. The Steering Committee reports to the Management Committee, which is under the chairmanship of the Deputy Secretary-General.

65. Up to the time of writing, the Steering Committee had, as already indicated, provided excellent support and guidance regarding the project direction and its management. The Committee enjoys an environment that is conducive to rapid resolution of issues, and each member has fulfilled his or her responsibility to ensure effective and timely decision-making. Representation from different parts of the Organization has facilitated the coordination of actors and coherence of actions during the preparatory phase and so far into the design phase.

66. However, recognizing the need to engage additional high-level stakeholders to ensure that the design of the solution meets the requirements of all parts of the Secretariat, in June 2009, the Steering Committee affirmed the need to be more inclusive. The Committee decided to expand its membership to include a small number of additional representatives from key organizational and geographic entities not currently on the Committee.

67. The Committee also agreed to set up an additional governance tier in the form of business owners,[24] who will work to support Umoja by ensuring that user departments, offices and missions are involved through the remaining phases of the project, and, in an advisory capacity, will participate in the review and recommendations on changes in structures, roles, practices and processes. This arrangement strives to balance representation and productivity, as running a Steering Committee with members from every entity across the Secretariat would not be practicable.

68. The Umoja Project Director reports both to the Under-Secretary-General for Management, as Chair of the Umoja Steering Committee, and to the Chief Information Technology Officer on day-to-day project management and technology issues. This governance structure has proven to facilitate the smooth implementation of the project by ensuring that both the technology/infrastructure requirements of ERP are managed and that the project fully meets the requirements of the process owners.

69. The efficacy of the governance model will continue to be assessed as the project evolves.

[24] Business owners are individuals from functional, geographic and organizational areas who provide leadership regarding United Nations business processes.

C. Project staffing

70. Forty-four positions were identified in the organizational structure proposed by the Secretary-General (see A/62/510/Rev.1, fig. III). The status of these positions at 31 July 2009 appears in the table below. Increases in staffing levels required as the project progresses are discussed in section IV.D below.

Table 2
Umoja vacancy status at 31 July 2009

Status	*D-2*	*D-1*	*P-5*	*P-4*	*P-3*	*General Service (Other level)*	*Total*	*Percentage*
Filled								
Regular	1	5	6	1	—	2	15	34
Temporary	—	—	3	6	3	1	13	30
Under evaluation	—	—	2	3	—	—	6	14
Selected	—	1	—	1	—	—	1	2
Advertised	—	—	—	2	2	—	4	9
To be advertised	—	—	1	—	—	4	5	11
Approved	1	6	12	13	5	7	44	100

D. Contracts

71. At the time of writing, Umoja had contracted with specialist systems integration services (for the design phase only) and for strategic advisory services, and work is progressing satisfactorily. Contracts still to be finalized are those for systems integration services for the subsequent phases of the project (request for proposal being prepared), as well as the contract for enterprise resource planning software (under negotiation).

72. Following a comprehensive and transparent competitive bid process for ERP software, the Assistant Secretary-General for Central Support Services, on the recommendation of the Headquarters Committee on Contracts, authorized negotiations with a market-leading enterprise software firm, the bidder with the highest combined technical, commercial and legal score. Ongoing negotiations are being informed by the scope and phasing exercise, which had not yet been completed at the time of writing. Several contractual models are being explored, including one that allows for procuring modules and user licences in alignment with the systems deployment strategy. It is intended to structure the contract to allow other United Nations system agencies to benefit from agreed favourable pricing, terms and conditions.

E. Change management

73. Change management is integral to the success of Umoja's administrative reform and therefore to the realization of benefits. As noted, Umoja is not just about implementing a new system; it is about implementing new and better ways of

working together, which includes changing not only practices and procedures but also roles and responsibilities, and possibly the structure of the Organization's administrative and support services, in order to achieve the most efficient possible solution.

74. Change management covers all activities aimed at helping the United Nations functionally, technologically and psychologically adapt to changes in processes, procedures, roles, structure and technology. The changes in the human skills, working methods, procedures and technology required to fully realize the benefits of Umoja requires a strong commitment from staff at all levels. Recognizing this, Umoja is taking a comprehensive and structured approach to change management.

75. The Umoja change management team will integrate its work with the major phases of the project, overseeing activities that will produce key deliverables with participation from an extended network of Umoja stakeholders. The Umoja team will also develop local change management capacity throughout the Organization and provide comprehensive role-based training to help staff to fulfil their new roles and responsibilities.

76. Comprehensive training of end-users is a critical factor in the success of Umoja. A key lesson learned from ERP implementations within the United Nations system is the extent to which success is tied to human factors that can only be addressed by direct engagement between experts and the user community. For ERP implementations, particularly those that require substantial organizational change, over-reliance on "viral" training approaches[25] often results in organizational trauma, lost productivity, and escalating support costs. The substantial hidden costs of attempting to "train on the cheap" make it an expensive and risky proposition that can compromise the entire effort. Instead, Umoja will pursue a robust, cost-effective training strategy that involves users early, employs United Nations staff as full-time trainers whenever possible, utilizes computer-based training where practical, and has at its core effective, role-based classroom training for all users of the new solution.

77. Substantial investment in change management throughout the Organization is an essential condition for the successful implementation of the Umoja solution. ERP projects typically invest between 20 and 30 per cent of total expenditure in change management, depending on functional scope and the extent of organizational changes required. Proper investment in change management reduces project risk, maximizes acceptance of the new solution, minimizes organizational cost and disruption during implementation and helps to ensure the realization of benefits in the shortest possible time frame.

IV. Implementation strategy and resource requirements

78. The present section sets forth the analysis and reasoning behind changes in funding, as well as the revised requirements, which come from considerably more detailed and consultative research performed since the publication of document A/62/510/Rev.1. The section also discusses implementation strategies, project cost

[25] Directly training only a few users from each area and then requiring this small group of new users to teach the bulk of the users back in their home offices.

drivers, resource requirements for the biennium 2010-2011 and the rationale for contingency resources.

A. Background

79. In General Assembly resolution 63/262, Member States requested that two interlinked issues be addressed to attempt cost containment of Umoja, and possibly spread expenditure out over time. First, as an ERP system is a prerequisite to the mandated implementation of IPSAS, the Secretariat was asked to highlight those modules that are essential for the implementation of IPSAS. Hence an "IPSAS only" implementation option is discussed below. Second, the Secretariat was asked to consider the viability of a reduced ERP package at lower cost.

80. After thorough analysis, it was concluded that no shortcuts could be made without introducing unacceptable risk, increasing the longer-term cost, and sacrificing most of the benefits. This is due primarily to the dimensions of the Organization and therefore the scope and scale of the programme. Nevertheless, several implementation options were analysed in order to determine the most cost-effective approach.

81. From January 2008 until the time of writing, members of the Umoja team with particular experience in ERP deployments, assisted by specialist consultants, and in consultation with other United Nations system agencies, have worked to determine the most cost-effective and risk-averse implementation strategies. Their findings include the following:

(a) Owing to the large number (over 500) of existing, non-integrated administrative information systems currently in use throughout the Organization, and in some instances still being developed, the most cost-effective approach to deployment is to replace a maximum number of those systems as quickly as possible. The advantages would be to reduce the number of costly interfaces, to maximize the resources freed from maintaining and operating those systems and to speed the time to benefit realization;

(b) Full IPSAS compliance requires that all but a few of the functional modules of an ERP system be implemented, not simply the accounting modules. To exclude the minor pieces that are not directly IPSAS-related would be a false economy: first, the additional work required later on in order to integrate the remaining pieces is performed more economically as part of the initial, larger effort; and second, components that are not strictly related to IPSAS compliance are nevertheless vital parts of the integrated system that contribute strongly to the efficiencies of business processes, to the overall acceptance of the solution and to the realization of benefits. An IPSAS-only system will not achieve a significant proportion of the benefits claimed in section II above;

(c) Implementing a software solution that was built to be a functionally integrated system in a piecemeal manner adds significant cost to the effort. Multiple costly tasks, including project management, interfacing, converting, testing, training, and subject matter expert participation, need to be repeated each time a functional element is added post facto. It is far more economical to design, build and test an integrated system in its entirety;

(d) Costs are best contained, and risks mitigated (and therefore exposure to additional costs reduced), if the complete system is deployed across its global user base using a phased, or incremental, approach. It is now well known from other agencies that a global "big-bang" approach (single and simultaneous deployment worldwide) is risky and costly and can negatively affect the operability of the Organization for a significant time. In some cases, stabilization periods have lasted more than a year, during which time those organizations have suffered from various forms of administrative breakdown, such as delays in field operations, inability to pay staff, inability to pay suppliers and inability to perform accurate financial reporting.

B. Analysis of cost drivers

82. The cost of an ERP initiative is driven primarily by: (a) functional scope (the range of functional elements implemented, e.g., accounting, procurement, payroll, etc.); (b) geographical scope (number and locations of users); (c) project strategy; and (d) implementation strategy, as follows:

(a) *Functional scope*. It is assumed that the functional scope remains as originally presented, owing to: (i) the economies of scale that are derived from simultaneous inclusion of all functions; (ii) the fact that the majority of functions relate to IPSAS compliance; and (iii) that benefits are greatest for the most complete functional implementation. Costs related to scope are contained by ensuring that functions remain common between offices, in other words that processes are harmonized across the Organization and divergence across individual offices is eliminated or kept to a strict minimum;

(b) *Geographical scope*. It is also assumed that geographical scope will be complete, in other words the reform, the training and the system will affect and be made available to the entire Secretariat, including field operations. Costs related to geography are contained by ensuring that all functions are not necessarily performed in all locations, unless it makes good operational sense to do so;

(c) *Project strategy*. The major cost elements of an ERP project are staff, general operating expenses, consulting services, travel, training, software and hardware. The project strategy that drives the costing provided in the present report is based on a compromise between low cost and low risk. Every attempt has been made to keep all these elements to their lowest possible level, and multiple options were considered for every one of the hundreds of parameters that contribute to the overall cost calculation. Further reductions to the figures presented may be possible, but would each introduce additional risk. It has been concluded therefore that the costs presented in the report, which are structured slightly differently than those originally projected owing to the availability of more information, do represent the most economical approach to implementing an ERP system and obtaining the desired benefits, while still maintaining manageable risk levels and still respecting the functional and geographical scope that the Organization requires. In comparison with the previous submission, the "pure project" costs have in fact been slightly reduced from $286 million to $277 million;

(d) *Implementation strategy*. Previous proposals on the ERP implementation strategy and timeline suggested that Umoja would be designed, built, tested and deployed in two waves, with a phased introduction of functionality. However,

following the selection of the ERP package and the subsequent analysis of both the software and the United Nations high-level business processes, and taking into consideration advice from other organizations and strategic partners, the implementation strategy has been revised to reflect a full enterprise design (all functionality), full build and test, followed by phased geographical roll-out. In the same vein, the fast-tracking of individual functional elements is no longer envisaged owing to the additional cost that this approach entails.

C. Implementation options

83. The cost of implementation rises quickly with increased numbers of deployments. From this argument, the "big bang", or single worldwide deployment option, would be the cheapest. However, it also carries with it the greatest risk, as discussed.

84. In order to keep both risk and costs to minimum levels, several implementation options were studied. The analysis showed that the most cost-effective and risk-averse solution would be to deploy the complete functional solution to the United Nations worldwide in three phases. To minimize operational disruption, the first of these phases would be a "pilot" phase, in other words a deployment to a smaller office, for example a regional commission, as well as an adjacent peacekeeping mission, sub-offices included. This smaller-scale initial deployment would allow the system to be tested operationally and permit the issues that invariably occur in a new deployment to be ironed out in a more manageable environment. Once stabilized and accepted by the user community, the solution could be deployed to the rest of the Organization in two further phases, with the confidence and security gained from the initial experience. It is believed that it would be more appropriate in the United Nations context, and would avoid many of the issues that several United Nations system agencies have experienced, including serious disruption of core administrative functions. It is therefore recommended that this approach be adopted.

85. Alternative options that were studied closely but that are not recommended include: (a) deploying only those modules related to IPSAS, before considering the others; (b) a phased design, build and deployment of major functional components, for example, implementing only a finance solution before attempting human resources, then supply chain and others; and (c) a more traditional multi-phased implementation, deploying from the centre of the organization (Headquarters), radiating out to smaller and smaller offices.

86. Compared to the recommended approach, all of these alternative options are more costly, have longer times to full deployment (and therefore longer times to benefit realization), and are more risk-intense. Even the option of deploying IPSAS functionality first does not achieve IPSAS compliance any quicker, owing to the fact that the majority of modules are required, and while slightly cheaper in the coming biennium, is more costly overall.

Table 3
Deployment options — description

Option	*Description*	*Analysis*
Pilot first	**(Recommended)** Deploy to a group of pilot sites first, then to the rest of the Organization in two phases	Cheapest and quickest overall solution, with fastest time to benefits. Although not the lowest cost option in the biennium 2010-2011, the investment pays dividends later on. Lowest risk option, with lowest operational impact during the stabilization phase. Fastest path to impact for both administrative areas and peacekeeping — the latter is included in the first implementation phase.
IPSAS first	Configure and deploy only those modules related to IPSAS first, then the rest	Most functions/modules are required for IPSAS, but those that would be left out in the first phase are the major contributors to efficiencies and benefits.[a] While the initial cost is lower, the overall cost is far higher owing to doubling of effort in build and implementation, as well as significant re-work and re-training required to integrate second-phase functions. Solution is higher risk and first phase is more "IMIS-like".
By function	Configure and deploy major functional groups sequentially	By far the most costly option, with high redundancy of major, resource-intensive tasks such as testing and training. Requires greater number of interfaces with existing systems and forces the slowest de-commissioning of existing systems. Offers the slowest time-to-benefit realization owing the longest time both to full integration.
Traditional	Deploy all functions from the centre outwards, in five or more deployment phases	Most commonly used approach (hence "traditional"), and the second least expensive, but critically has the lowest time to impact for peacekeeping, and a longer time to benefit than the recommended approach. Benefits include functional "wholeness" and cost-saving through simultaneous design and build of entire solution.

[a] Includes: interfaces to client relationship management as well as some client relationship management functionality inherent to the core ERP solution, workflow management, enterprise portal components, all self-service components, programme management, parts of supply chain management including critical functionality for peacekeeping, business intelligence functionality (which includes reporting (other than IPSAS), business analytics and forecasting, donor reporting and managerial decision support systems).

Table 4
Deployment options — summary
(Thousands of United States dollars)

Deployment option	*Earliest date of deployment*		*Benefits realized*	*Full IPSAS compliance*	*2010-2011 costs*	*Remaining costs*	*Total costs[a] (2010 to full deployment)*
	First	*Final*					
Pilot first	Q4 2011[b]	Q3 2013	Q3 2015	Q3 2013	175 348	120 444	295 792
IPSAS first	Q4 2011[b]	Q1 2016	Q1 2018	Q3 2013	152 144	225 762	377 906
By function	Q4 2011[b]	Q3 2015	Q3 2017	Q3 2015	180 291	340 025	520 316
Traditional	Q4 2011[b]	Q1 2015	Q1 2017	Q1 2015	143 862	221 935	365 797

Abbreviations: Q1, first quarter; Q3, third quarter; Q4, fourth quarter.

[a] Includes start-up operational costs that were not included in previous submissions. Excludes 2008-2009 costs ($20 million).

[b] Provision would be made to have financial reports in compliance with the United Nations system accounting standards generated for those offices that are converted in Q4 2011.

Table 5
Comparison of cost and time-of-deployment options

	Duration (years)	*Number of deployments*	*Time (percentage)*	*Cost (percentage)*
Pilot first	3.75	3	100	100
IPSAS first	6.25	6	167	126
By function	5.75	At least 6	153	174
Traditional	5.25	5	140	124

D. Resource requirements

87. In today's difficult global economic environment, the level of investment required in an initiative of this nature is onerous. Although the business case projects that the benefits to be realized as a result of Umoja will cover the initial investment and then continue to deliver annual benefits, it may still be tempting to continue running the support and operational functions of the United Nations under the status quo, and wait for more favourable economic times. However, such a strategy carries with it a substantial opportunity cost, in other words an economic cost of not realizing the opportunity at hand: first, seed funding has already been spent and has produced excellent results, and this funding would be lost in the case of a hiatus in the programme, needing to be reinvested later; second, although economic times are difficult, they also present opportunities, such as the cheaper availability of materials and specialist services; and third, the longer Umoja is delayed, the later benefits will accrue, the longer the Organization will continue to operate and spend below achievable efficiency, the longer it will spend money on improving and maintaining outdated tools and technology, the longer it will run the risk of incurring irreversible losses through the inability to correctly manage and account for its assets, and the longer it runs the risk of operational failures.

88. In line with the 2008-2009 cost-sharing proposal, it is proposed that total resource requirements for Umoja be financed from among the regular budget,

peacekeeping and extrabudgetary resources in the following percentages: 15 per cent from the regular budget; 62 per cent from the peacekeeping support account; and 23 per cent from the special accounts for programme support costs to which are credited overhead income generated by expenditures relating to technical cooperation, and to general trust funds as well as reimbursement for administrative support provided by the Organization to extrabudgetary entities such as the United Nations Development Programme, the United Nations Children's Fund and so forth. That formula is based on the distribution of 2008-2009 estimated resources between the regular budget, peacekeeping activities and technical cooperation and general trust funds and administrative support provided by the Organization to extrabudgetary entities, proportioned against the total ERP project cost.

89. It is proposed that the 2010-2011 resource requirements be cost-shared using the 2008-2009 formula after including an adjustment for the previous amounts funded for 2008-2009 to ensure that the overall project budget cost is shared in accordance with the formula.

Table 6
Summary of net resource requirements by source of funds (full project cost at current rates)
(Thousands of United States dollars)

Source of funds	*2008-2009*	*2010-2011*	*2012-2013*	*Total*
Regular budget	5 110.0	24 192.2	18 066.6	47 368.8
Peacekeeping support account[a]	7 050.0	114 065.9	74 675.3	195 791.2
Extrabudgetary	7 840.0	37 090.1	27 702.1	72 632.2
Total	**20 000.0**	**175 348.2**	**120 444.1**	**315 792.3**
Contingency provision	—	—	—	—
Total	**20 000.0**	**175 348.2**	**120 444.1**	**315 792.3**

[a] For 2008-2009, amount relates to the peacekeeping period 1 July 2008 to 30 June 2009.

Table 7
Total resource requirements for implementation of the enterprise resource planning
(Thousands of United States dollars)

Object of expenditure	*2008-2009*	*2010-2011*	*2012-end of project*	*Total*
Posts	—	22 729.9	28 312.1	51 042.0
Other staff costs	8 893.3	19 440.0	19 439.0	47 773.3
Consultants and experts	—	3 331.2	3 331.2	6 662.4
Travel of staff	1 071.2	7 446.8	16 064.7	24 582.7
Contractual services	7 820.8	89 098.6	31 585.6	128 505.0
General operating expenses	1 285.0	11 625.7	7 681.4	20 592.1
Supplies and materials	23.5	146.0	146.0	315.5
Furniture and equipment	906.2	21 530.0	13 883.1	36 319.3
Total	**20 000.0**	**175 348.2**	**120 444.1**	**315 792.3**

Resource requirements for the biennium 2008-2009

90. It will be recalled that in resolution 63/262, the General Assembly:

(a) Approved the amount of $20 million, comprising $5,110,000 to be funded from the regular budget for the biennium 2008-2009, $7,050,000 from the support account for peacekeeping operations for the period from 1 July 2008 to 30 June 2009 and $7,840,000 from extrabudgetary resources for the biennium 2008-2009 for the implementation of the enterprise resource planning system;

(b) Decided to approve the utilization of the amount of $2,346,000 of interest accrued under the Integrated Management Information System Fund available as at 31 December 2007 to offset the regular budget requirements for the enterprise resource planning project;

(c) Requested the Secretary-General to meet the regular budget share of requirements for the enterprise resource planning system in the amount of $2,764,000 from the overall resources appropriated for the biennium 2008-2009 for the regular budget and to report the related expenditure as necessary in the second performance report for the biennium 2008-2009;

(d) Authorized the Secretary-General to enter into commitments in a total amount not to exceed $7,050,000 for the support account for peacekeeping operations for the period from 1 July 2008 to 30 June 2009 in respect of the support account share for the enterprise resource planning project;

(e) Took note that an estimated amount of $7,840,000 would be financed from extrabudgetary resources for the biennium 2008-2009.

Resource requirements for the biennium 2010-2011

91. It will be recalled that in the proposed programme budget for the biennium 2010-2011 for section 28A, Office of the Under-Secretary-General for Management, the Secretary-General proposed a provision of $11,775,900 under grants and contributions to cover the regular budget share of the 2010-2011 estimated total costs of the enterprise resource planning project amounting to $78,506,000, based on the cost-sharing formula as detailed in document A/62/510/Rev.1 and endorsed by the General Assembly in its resolution 63/262. In that report, the Secretary-General also informed the Assembly that the details of the user needs analysis of the project would be provided in the comprehensive report requested by the Assembly to be submitted at its sixty-fourth session and that at that stage, preliminary estimates of the total gross budget of the project for the biennium 2010-2011 might amount to approximately $186 million, with the regular budget share amounting to $28 million, or some $16.2 million in addition to the amount estimated in that document.

92. The resource requirements for the biennium 2010-2011 to implement the pilot first option are summarized in table 6 above, and the overall explanation of each of the components follows.

93. The amount of $175,348,200 provides for 80 temporary posts (68 Professional and above and 12 General Service) ($22,729,900) and non-post resources ($152,618,300) covering, inter alia, temporary assistance, consultants and experts, travel of staff, general operating expenses, supplies and materials and furniture and equipment.

Posts

94. The amount of $22,729,900 will provide for the conversion of general temporary assistance to 44 temporary posts and the establishment of 36 new temporary posts, which will be the Umoja core project team to complete the activities planned for 2010-2011. The magnitude of the required work cannot be executed by 44 core positions approved earlier, as determined by the more detailed analysis conducted since the previous report. The provision of adequate internal resources is key to the successful development and deployment of a comprehensive and effective ERP system, and reduces dependency on more expensive external resources while ensuring that knowledge of the new system is sufficiently institutionalized. Specifically, lower-cost internal resources will undertake a higher percentage of activities than previously anticipated. These include some degree of systems configuration, end-user training and data conversion.

95. In order to meet at least part of this requirement, the Secretariat will make every effort to facilitate the full-time assignment of staff to the project. It is typical in an ERP implementation that a significant proportion of these posts are reabsorbed into the organization at large after deployment. This has the added value of contributing to the successful adoption of the system and accelerated realization of benefits as these "super-users" greatly facilitate the transition within their respective offices.

96. The proposed 36 new temporary posts (5 P-5, 22 P-4, 3 P-3, 1 P-2/1, 1 General Service (Principal level), 4 General Service (Other level)) are required as follows:

(a) **Project management (1 P-3, 2 P-4, 2 General Service (Other level)):** five additional posts are essential to provide sufficient project management (1 P-3) and administration of resources that includes budget, finance, human resources, general administration and procurement (2 P-4 and 2 General Service (Other level));

(b) **Organizational change management (1 P-3, 1 General Service (Principal level), 1 General Service (Other level)):** three additional posts are required for training management (1 P-3), training coordination (1 General Service (Principal level)) and events planning (1 General Service (Other level));

(c) **Technology management (4 P-5, 12 P-4):** 16 additional posts are required for technology management. Four P-5 architect posts are needed for solutions, infrastructure, business intelligence/data conversion and user interface, portal and mobile technology. Five P-4 technical architects are essential to serve as liaison for each functional area. Seven P-4 architect posts are needed for master data management, security, reporting, portal solutions and workflow, mobile technology and forms and Web 2.0 solutions;

(d) **Functional teams (2 P-5, 6 P-4, 1 P-3, 1 P-2, 1 General Service (Other level)):** of the eight positions currently assigned to each of the four functional areas, two serve as part-time focal points for change and technology management, respectively. The remaining six are inadequate to cover the broad scope of each area. The finance team requires four additional P-4 staff for the management of strategic framework lifecycle, assets accounting, accounts payable and accounts receivable. The human resources team needs a P-2 post for coordination with the talent management team on on-boarding, position management, performance management and learning management, and the new pension system, as well as a General Service (Other level) post to provide information management and

document support assistance to the team. The supply chain team requires a dedicated P-5 post for planning and demand forecasting because the concept of supply chain is new to the Organization. A P-4 post is needed for receipt, warehousing, transportation and distribution of supply. The central support services team needs one P-5 post for the design of the Organization's strategic framework and project management, one P-4 post for planning and trust and grant management, one P-4 post for information management and one P-3 post as a technical integration specialist.

97. The revised organization chart is shown in annex III.

Other staff costs

98. The amount of $19,440,000 is required for general temporary assistance to allow business owners to employ limited replacements for their subject matter experts who are needed to work with the Umoja team during the build and implementation phases of the ERP system.

Consultants

99. The amount of $3,331,200 provides for consultants with specialized expertise not available in the Organization and outside the scope of the systems integration contract as follows:

(a) Change management consultants specialized in communications, training, facilitation and planning may be used;

(b) Technical consultants: in some very specific technical areas, systems integrators are unable to provide all the necessary resources in the areas of mobile technology, report design and implementation, data warehousing and business intelligence;

(c) Functional consultants: the Umoja initiative will push the abilities of both the software and the systems integrator in order to cover United Nations-specific requirements, particularly in the areas of travel, central services, field operations and logistics, payroll, budgeting and planning. It often happens that there are only a few qualified consultants on the world market with the correct skills and experience in these areas, that may, for example, have worked with other United Nations bodies or public sector entities;

(d) Management consultants: it is useful, and a good risk-mitigation strategy, to use independent consultants to cross-check the project management services provided by the main contractor/systems integrator. Projects as large as Umoja can experience management issues due to the complexity, scope and depth of its activities. An external viewpoint often assists in ensuring that the project is kept on track and that sound decisions are being made.

Travel of staff

100. It is estimated that the amount of $7,446,800 is required to enable the Umoja team to undertake trips in order to support pilot deployment, conduct change management, technical and project management officer missions as well as conduct a workshop to cover specific validation and change management activities for a broad range of participants outside of Headquarters.

Contractual services

101. The amount of $89,098,600 will provide for legal and strategic consulting, ERP technical research and independent advice and systems integrator services, as well as for training facilities in locations where in-house facilities are not available. The provision will also provide for training of the core project team functional staff on ERP.

General operating expenses

102. The amount of $11,625,700 is required to provide for rental of premises to provide office space; alteration of premises; communications to cover the cost of long distance telephone calls, fax and teleconferencing requirements and local area network expenses; maintenance of office equipment and central infrastructure (local area network, Internet, etc.) hardware and software providing network and help desk support.

Supplies and materials

103. The amount of $146,000 is required to cover the cost of stationery, office and data-processing supplies for staff.

Furniture and equipment

104. The amount of $21,530,000 will provide for the one-time acquisition of furniture and office equipment for the proposed 36 new core staff and 66 subject matter experts, the payments of essential rights and maintenance for the usage of tools, and the purchase (but not longer-term maintenance) of enterprise-related software, as well as the purchase of computer hardware to build the development platform, all of which will ultimately be used in the production platform following the launch.

Explanation of changes in costs

105. The costs presented above include the same cost elements as the previous report, in other words, project costs, but now also includes some future operating costs, including hardware, databases, tools, additional training, travel costs and support for the pilot site launch (see paras. 112-114 below). The difference between the present request as compared to the original submission in document A/62/510/Rev.1 is attributable to the following factors, all in turn derived from lessons learned from other agencies as well as detailed analysis of previously unavailable information: (a) an additional 36 posts to bring the team size to a level commensurate with a project of this complexity, which was underestimated in the first instance; (b) additional funds for the hardware and associated services required for the design and development effort, which was not included in the previous budget estimate; (c) start-up operating costs (e.g., additional hardware, databases, tools, and additional training, travel costs and support for the pilot site launch); (d) an increase in funding for subject matter experts to train and support Umoja during the phased deployments; and (e) an increase in travel costs to support instructor-led training versus the train-the-trainer approach originally proposed. The latter is seemingly less expensive up front, but is more costly in the long term as it requires additional support costs and retraining.

106. On the other hand, contractual service costs have been reduced following more detailed analysis of project tasks. Increased participation of internal resources reduces cost and builds a cadre of staff who can support the system after the launch, which reduces the Organization's risk of dependency on high-cost consultants for support in the long term.

107. The net effect of the changes in cost structure is as follows: the project cost, excluding all operational costs (i.e., "pure project") has decreased slightly. Whereas the previous submission proposed $286 million, the project costs are now $277 million. As just noted, although posts, staff costs, subject matter expert costs and training and related expenses have all increased, the consulting costs have been decreased.

108. This strategy has the effect of increasing the United Nations ownership of its own solution, and its ability to support that solution, while still availing itself of indispensable consulting skills. It also heightens the opportunity for knowledge transfer from external experts to staff members. However, the overall cost and the bottom line of the present report shows an increase, to $315 million, as start-up operational costs, which had previously been omitted, have now been included. This will ensure that the project has sufficient funds to cover operational infrastructure and support in the early implementation phases, until such time as Umoja is operationalized, that is, until the project team itself is disbanded, project staff return to positions within the administrative, operational or IT areas of the Organization and longer-term operational costs are covered by operational budgets.

Biennium 2012-2013 and beyond

109. Although the projections for 2012-2013 are as accurate as possible at this stage, the costs presented will be refined and updated in subsequent progress reports, as further analysis is conducted.

110. Under the suggested deployment option (pilot first), the project costs do not go beyond the end of 2013, assuming full funding as proposed and successful completion of tasks as planned. In this scenario, Umoja costs are operationalized, that is, they become part of normal operational budgets, beyond 2013. From 2012, technology maintenance, upgrades and support come from information technology budgets, and functional support, functional changes, reporting, training, and ongoing improvements come from the client areas. Thus Umoja ceases to exist as an independently funded project, and lives on as a continuously evolving system, toolset, training curriculum and set of practices.

111. Under other deployment options, or if the suggested option is not fully funded, a continuing project budget will need to be elaborated.

Future operating costs

112. Future operating costs for Umoja will comprise production hardware, software maintenance (initial software purchase is included in project costs), functional and technical support, hosting services, telecommunications, future upgrades to hardware or software, future improvements to the functional components, operating

system licences and upgrades, database licences and upgrades and other standard costs for the operational components of an ERP system.[26]

113. All direct project costs as well as some start-up operating and support costs are presented in the present report. At the time of writing, it is still too early to forecast all future operating costs with reasonable accuracy. For example, although software costs have been included in the present report, the negotiations for enterprise software (the largest element) are not yet completed and figures are therefore estimated based on early proposals.

114. The complete range of operating costs is currently under consideration, and estimates will be made available as soon as possible. Accurate forecasts will be possible only once key decisions are made and design is completed, that is, in 2010. With adequate funding for 2010, it should be possible to provide those forecasts at the sixty-fifth session of the General Assembly.

E. Contingency resources

115. In formulating the total project resource requirements, great care was taken to arrive at realistic estimates, including the solicitation of advice from external experts. However, notwithstanding this due diligence, uncertainty arises in any large-scale project over the life of its implementation. Accordingly, contingency provision has been an accepted fiscal planning tool for managing the risk of cost escalations and covering potential shortfalls in cost estimates. In determining the percentage amount to be proposed for contingency, independent advice based on experiences of global ERP implementations recommended a range of 10-25 per cent.[27]

116. However, further to the decision of the Advisory Committee on Administrative and Budgetary Questions in 2008 to remove the contingency provision from the 2009 budget revision (see A/63/487 and Corr.1 and 2), no contingency provision is included in the present report. It is nevertheless suggested that a contingency factor of 15 per cent of the total of the individual components described above would be reasonable, and that should recourse to any such contingency provision during the remaining life of the project be required, it would subsequently be requested of the General Assembly in accordance with established procedures.

117. Based on the process analysis and requirements review done to date and assuming the Organization's ability to adapt, no customizations to the core ERP code have been identified as essential at this point. A number of extensions to the system will be required to implement optimized end-to-end business processes, but development of extensions does not have a significant impact on upgrades and maintenance of ERP software. The majority of the technical development effort is related to reports, interfaces, data conversions and workflow as well as the extensions. If it is discovered that customization is unavoidable, contingency funds may need to be utilized.

---

[26] The initial operating costs (i.e., elements required for start-up of operations) have been factored into the present report and accounts for some of the increase since document A/62/510/Rev.1 was issued.

[27] Some sources quote as much as 30 per cent.

V. Lessons learned

118. Owing to the magnitude and complexity of this initiative, the Umoja team has made a concerted effort to leverage the knowledge and experience of others who have been involved in past efforts at administrative reform (including the IMIS implementation) as well as ERP implementations in other United Nations system entities. The Umoja team has done so, for example, by involving subject matter experts in design workshops; recruiting staff who have worked on other United Nations system ERP implementations; engaging with United Nations common system agencies, including through the ICT Network of the United Nations System Chief Executives Board for Coordination and the United Nations ERP special interest groups; and hiring consultants with extensive ERP experience, including within the United Nations system. Some of the key lessons are captured in the present section.

A. Integrated Management Information System

119. It is inevitable that Umoja's implementation is compared with that of IMIS. As noted in the introduction above, Umoja's approach is distinct from that system, and purposely so. The Umoja team fully assessed lessons learned from major prior projects of this kind within the Secretariat, IMIS in particular, and is confident that such lessons have been fully taken into account within its programme.

120. Whereas IMIS did reform administrative procedures to some extent, it ultimately became primarily a technological update, to a large degree automating existing processes.[28] The Umoja strategy is to identify and ensure the adoption of key reform elements before configuring the technological components. With the full support of all stakeholders, Umoja is and will be a business transformation project that will fully re-engineer business processes for greater efficiency, and for compliance with best practice, in the design of the system.

121. Despite original intentions, the scope of IMIS was cut back and did not include several key functions such as procurement and logistics, and was not deployed beyond the eight largest offices of the Organization.[29] The design of IMIS was piecemeal, reflecting the project's funding arrangements, and resulted in organizational silos. Its limited geographical roll-out took more than six years in the case of finance, and never reached peacekeeping missions, significantly delaying and even preventing the realization of benefits. More importantly, as IMIS was implemented in a stand-alone mode at offices away from Headquarters, cross-geographical benefits were not achieved.[30] Contingent on funding, Umoja will take a holistic approach — geographically and functionally — driving towards integration and harmonization throughout the entire Secretariat, including in budgeting, project management, grants and asset management.

122. The IMIS change management approach included end-user training, albeit on a limited budget, but is said not to have enjoyed full and adequate engagement of

---

[28] A limited number of business processes were re-engineered.

[29] At the time in 1992-1993, peacekeeping operations were viewed as temporary operations and not part of the core Secretariat, as they are now.

[30] The cheap global telecommunications infrastructure we enjoy today did not yet exist at the time of implementation.

management, staff, Member States and other stakeholders. Umoja will attempt to secure more engagement across the Organization. Indeed, as noted in section III.E above, outreach to key offices and stakeholders has already commenced.

B. United Nations system

123. The General Assembly has stressed that the United Nations should benefit from the lessons learned by other entities of the United Nations system that have implemented ERP systems (see resolution 63/262, sect. II, para. 16).

124. A number of recommendations from other entities regarding the organization and orientation of the project are being used to tailor the Umoja approach. These include securing strong, high-level sponsorship of the project; establishing an effective governance structure; engaging an experienced Project Director and team; ensuring the project is business-driven, while strongly supported by information technology; and beginning the change management process early.

125. Time and again, United Nations entities have warned that the implementation of ERP must be adequately funded and that funds must be available as needed by the project rather than according to the constraints of internal budget cycles. Furthermore, it is consistently emphasized that change management is essential to the project's success and must not be underresourced. Adequate investment in training staff and providing a functionally skilled global support capacity is also imperative.

126. At the same time, within the project, internal controls must be maintained, and systems integrators and other external parties must be closely and effectively managed. Essential, too, are tight management of scope and minimization of customization.

127. Continuing to apply these and other lessons will ensure a robust framework for successful delivery over the life cycle of the project. With the hindsight and knowledge gleaned from sister agencies' experiences, the Umoja team will take every measure to circumvent foreseen challenges and achieve excellence in the ERP implementation of the United Nations Secretariat.

VI. Summary of resource requirements for the enterprise systems for the United Nations Secretariat worldwide and request for action by the General Assembly

A. Summary of resource requirements

128. It is estimated that a total of $315,792,300 (at current rates) will be required for the implementation of ERP, including both project and start-up operational costs. The total amount for the biennium 2010-2011 is estimated at $175,348,200.

129. It is proposed to fund the regular budget portion of the project totalling $24,192,200 under section 28A, Office of the Under-Secretary-General for Management, of the proposed programme budget for the biennium 2010-2011. The remaining requirements for 2010-2011 would be funded from the peacekeeping support account ($114,065,900) and extrabudgetary resources ($37,090,100).

B. Actions to be taken by the General Assembly

130. **The General Assembly is requested:**

(a) To recognize that Umoja is the primary vehicle for administrative reform in the United Nations;

(b) To endorse the proposals and approach, described in the present report, for the replacement of the IMIS system and related ancillary systems in all offices of the United Nations Secretariat, including offices away from Headquarters, regional commissions, peacekeeping and political missions and other field missions;

(c) To approve the overall cost of the ERP project to be completed during the period 2008-2013, at a total project budget estimated at $323,137,900 gross ($315,792,300 net) (at current rates);

Regular budget

(d) To approve a gross amount of $24,652,900 under grants and contributions (net amount of $24,192,200) inclusive of the amount of $11,775,900 already proposed under section 28A, Office of the Under-Secretary-General for Management, for the proposed programme budget for the biennium 2010-2011;

(e) To note that the future remaining requirements in the estimated amount of $18,667,600 gross ($18,066,600 net) for the implementation of ERP would be considered in the context of the proposed programme budget for the relevant biennium;

Peacekeeping operations support account

(f) To approve a total amount of $29,059,500 gross ($28,516,500 net) to be financed from the peacekeeping operations support account for the period from 1 July 2009 to 30 June 2010 to meet the requirements of the ERP as contained in the present report;

(g) To note that the future remaining requirements in the estimated amount of $87,178,400 gross ($85,549,400 net) will be included in subsequent peacekeeping support account requirements for the financial periods from 1 July 2010 to 31 December 2011;

(h) To note that the future remaining requirements in the estimated amount of $77,159,500 gross ($74,675,300 net) will be included in subsequent peacekeeping support account requirements for the financial periods until 2013;

Extrabudgetary resources

(i) To note that an estimated amount of $72,632,200 of the total ERP project cost would be financed from extrabudgetary resources.

Annex I

Expected benefits of the enterprise resource planning project

The tables below provide the benefit calculation for each of the functional areas. The "baseline value" column indicates the non-financial quantity of the baseline. The baseline is a value that is used as a reference point, representing the current state. Where the baseline was initially expressed in financial terms (e.g., the cost of goods or services, budget value, etc.) the value in this column has been documented as not applicable or the column has been omitted if not applicable for all the opportunities in a specific table. These non-financial baseline values have been converted to financial values in the adjacent column by applying the appropriate factor, e.g., the average full-time equivalent cost of performing the task. It should be noted that the functional areas utilized the most appropriate cost per full-time equivalent based on the type of resources performing the activity. In most cases the cost per full-time equivalent was assumed to be $190,000 per year;[a] however, for a few selected benefits in the finance area a lower cost per full-time equivalent was utilized. The cost per full-time equivalent utilized in a particular benefit is documented in the footnotes. The calculations to achieve the baseline dollar value are described further in the footnotes.

The column "change range" provides the conservative estimate of the minimum and maximum benefits believed to be achievable through the implementation of Umoja for that opportunity. The change range percentage was determined using multiple factors, including benchmarks (where appropriate and applicable), actual data (where available) and the judgement of subject matter experts based on current knowledge of the potential to-be processes. In many cases, multiple factors may have been employed to provide the best estimate of the benefit, for example benchmarks were often adjusted downwards to account for the uniqueness of the United Nations. At all times the estimates provided were developed with a conservative outlook.

The next two columns represent the low- and high-range estimates of the benefit in financial terms, which are calculated by multiplying the baseline value by the appropriate change range percentage. The productivity/efficiency column indicates whether the benefit will arise predominantly from efficiency or productivity gains.

[a] Average fully loaded staff cost for a major duty station.

Table A.1
Supply chain/procurement/logistics

	Baseline value	*Baseline (millions of United States dollars)*	*Change range (percentage)*	*Estimate (millions of United States dollars)*		*Productivity (P)/ efficiency (E)*
				Low range	*High range*	
Raising requisitions	0.5 day[a]	1.6[b]	40-60	0.6	1.0	P
Processing requisitions to contract						
Transformation of requisitions into solicitation documents	0.5 day[a]	6.3[c]	30-60	1.9	3.8	P
Transformation of solicitation responses into contracts and contract management through to closure	0.5 day[a]	6.3[c]	20-50	1.3	3.1	P
Improved communication with the supplier, using electronic means as far as practicable	1 day[a]	12.5[c]	10-40	1.3	5.0	P
Paperless record creation over the acquisition cycle	1 hour[a]	2.0[d]	70-90	1.4	1.8	P
Accuracy of demand forecasts	[e]	204.1[f]	6.0-7.0	12.2	14.3	E
Accuracy of asset holdings	[e]	2 000.0[g]	0.5-0.75	10.0	15.0	E
Consumable assets that reach expiration	[e]	2 000.0[g]	1.0-1.5	20.0	30.0	E
Reduce inventory carrying costs	[e]	100.0[h]	0.5-0.75	0.5	0.7	E
Total				**49.2**	**74.7**	

[a] The time currently required to complete activities is based on estimates provided by multiple procurement subject matter experts.

[b] Based on average annual cost per full-time equivalent of $190,000, 261 work-days per year and 4,363 relevant purchase orders under system contracts in 2008.

[c] Based on average annual cost per full-time equivalent of $190,000, 261 work-days per year and 17,215 relevant transformations into purchase orders in 2008.

[d] Based on average annual cost per full-time equivalent $190,000, 2,000 work-hours per year: 4,363+17,215=21,578 purchase orders in 2008.

[e] Not applicable.

[f] Based on the total value of assets and materials in peacekeeping reported as at August 2009 by the Property Management Unit from Galileo using business objects: $2.0 billion. The report shows that surplus items constituted $204.1 million. The Department of Field Support defines surplus stock as goods that have been in stock for more than one year.

[g] Based on the total value of assets and materials in peacekeeping reported as at August 2009 by the Property Management Unit from Galileo using business objects: $2.0 billion.

[h] Based on the total value of assets and materials in peacekeeping reported as at August 2009 by the Property Management Unit from Galileo using business objects: $2.0 billion. Inventory carrying cost as a portion of total inventory value is 5 per cent based on industry values. Residual value is $99.99 million.

Table A.2
Technology and data management

	Baseline (millions of United States dollars)	*Change range (percentage)*	*Estimate (millions of United States dollars)*		*Productivity (P)/ efficiency (E)*
			Low range	*High range*	
Improved aggregation of data	1 275[a]	0.5-1[b]	6.4	12.8	P
Reduce time associated with fixing errors and aligning data	13.5[c]	3-6[b]	0.4	0.8	P
Reduce budget associated with continual data cleansing	13.5[c]	1.5-2.5[b]	0.2	0.3	P
Reduce spending associated with report filter changes to avoid bad data	13.5[c]	2-4[b]	0.3	0.5	P
Decommissioning systems	43.5[d]	60-100	26.1	43.5	E
Reduction in number of reporting databases, programmes and service requests	13.5[c]	5-10	0.7	1.4	E
Total			**34.1**	**59.3**	

[a] Contains the following elements from the biennial budget: Common support services (part VIII and extrabudgetary): $827 million; General Assembly and Economic and Social Council affairs and conference management: $662 million; Internal oversight: $37 million; Jointly financed administrative activities: $112 million; Safety and security: $207 million. Those values have been reduced by 50 per cent to produce an annual value of $922.5 million. Add the following annual budget elements of the support account for peacekeeping operations of $294 million and the United Nations Logistics Base at Brindisi of $58 million for a total baseline value of $1,275 million.

[b] Benchmarks reduced by 75 per cent to account for the uniqueness of the United Nations.

[c] Report programme maintenance portion of the information technology budget derived with following assumptions: Gartner estimates 65 per cent information technology budgets spent on maintenance (65 per cent of $83 million is $54 million) and 25 per cent of the 65 per cent is spent on data management issues (25 per cent of $54 million is $13.5 million).

[d] Based on an average support cost, as support costs were not provided for all systems. The average support cost was calculated as follows: IMIS support costs ($9 million) were excluded from the average calculation to avoid skewing the results. Excluding IMIS, support costs were provided for 484 systems. The total support costs included 216 full-time equivalents and $11 million recurring costs. The 216 full-time equivalents represent a cost of $22 million (using an average full-time equivalent cost of $100,000, assuming 10 per cent of full-time equivalents are professional and 90 per cent are local staff). This gives a total support cost of $33 million ($22 million plus $11 million) for the 484 systems with support costs, yielding an average support cost per system of approximately $68,000 ($33 million divided by 484). Extrapolating this to the 507 non-IMIS systems being retired and adding the IMIS support costs provides: 507 x $68,000+$9 million = $43.5 million.

Table A.3
Human resources

	Baseline value	*Baseline (millions of United States dollars)*	*Change range (percentage)*	*Estimate (millions of United States dollars)*		*Productivity (P)/ efficiency (E)*
				Low range	*High range*	
Effort required to process entitlements by human resources and payroll	415 FTE[a]	78.9[b]	15-30	11.8	23.6	P
Reduction of work effort for filing/storage needs per office (by moving to online/self-service)	100 FTE[c]	19.0[b]	20-40	3.8	7.6	P
Payroll efficiency gain in the field by having an integrated human resources, payroll and finance system	65 FTE[d]	12.4[b]	30-50	3.7	6.2	P
Effort required to print and process personnel action forms (printing, signing, mailing, storing)	14 FTE[e]	2.7[b]	75-100	2.0	2.7	P
Reduction of work effort due to reduction in the administration and production of organization reports (composition report, staffing report, etc.)	19 FTE[f]	3.6[b]	40-60	1.4	2.1	P
Effort required to process transfer scripts	6 FTE[g]	1.1[b]	100	1.1	1.1	P

	Baseline value	Baseline (millions of United States dollars)	Change range (percentage)	Estimate (millions of United States dollars)		Productivity (P)/ efficiency (E)
				Low range	High range	
Effort required for initiating and approving personnel action for initial appointment (and improvement opportunities from using self-service)	6 FTE[b]	1.1[b]	30-50	0.3	0.6	P
Mailing, storing and printing costs from printing and processing personnel action forms (printing, signing, mailing, storing)	[c]	0.15[d]	75-100	0.1	0.2	E
Total				**24.2**	**44.1**	

[a] The number of human resources full-time equivalents is calculated by assuming that the total number of human resources IMIS users for processing of personnel action forms and approval is 1,381, of which subject matter experts estimate that 80 per cent actually process entitlements as part of their responsibilities; additionally, it is estimated that 60 additional people work on entitlements without access to IMIS and 220 people in field missions process entitlements for staff not in IMIS; based on an Office of Human Resources Management survey, it is estimated that these staff spend 30 per cent of their time on processing entitlements: ((80% x 1,381)+60+220) x 30% = 415 full-time equivalents.

[b] Assumes full-time equivalent cost of $190,000 per year.

[c] Based on human resources subject matter expert estimate.

[d] 65 full-time equivalents in field payroll based on a global finance survey.

[e] Based on the following calculation: total number of personnel action forms processed is 138,000; filing takes 10 minutes for each; printing takes 2 minutes each. Average staff member hours per full-time equivalent per year equals 2,000: 138,000 x (10+2)/60=27,600 hours; 27,600/2,000=14 full-time equivalents.

[f] It is assumed that currently there are 17 to 20 full-time equivalents working on the administration and production of organization reports, for an average of 19 based on human resources subject matter expert estimate.

[g] Based on 600 transfers a year (extrapolated from Office of Human Resources Management tracking system) and an estimate of 20 hours spent per transfer (subject matter expert estimates).

[h] Based on 165 minutes per personnel action times 4,365 initial appointment personnel actions per year equals 12,004 hours, of which 30-50 per cent can be reduced by self-service data entry by staff member.

[i] Not applicable.

[j] Baseline: number of personnel actions processed in IMIS:138,000 with an estimated cost of $1.10 per action.

Table A.4
Central support services

	Baseline value	Baseline (millions of United States dollars)	Change range (percentage)	Estimate (millions of United States dollars)		Productivity (P)/ efficiency (E)
				Low range	High range	
Reduce time spent by travellers in travel-related activities (hours)	5.75 hours[a]	55.8[b]	30-50	16.7	27.9	P
Increase in gross income/cost recovery from services to the public and staff	[c]	35[d]	10-20	3.5	7.0	E
Total				**20.2**	**34.9**	

[a] Estimated hours per transaction, calculated by adding the following: planning and calculating costs: 2 hours; internal approvals: 1 hour; calls, e-mails, etc.: 1 hour; visa: 2 hours for 20 per cent of trips totalling 0.4 hours; medical: 2 hours for 10 per cent of trips totalling 0.2 hours; security: 0.5 hours for 25 per cent of trips totalling 0.15 hours; claims: 1 hour = 5.75 hours total.

[b] Based on 5.75 hours times an average rate of $95 per hour ($190,000 cost per full-time equivalent per year/200 hours per year) times 102,029 trips per year (based on travel units and sections from offices away from Headquarters, Headquarters and peacekeeping missions).

[c] Not applicable.

[d] Total gross revenue for commercial activities and cost-recovery operations: $35 million a year for Headquarters, offices away from Headquarters and the Department of Peacekeeping Operations.

Table A.5
Finance

	Baseline value	*Baseline (millions of United States dollars)*	*Change range (percentage)*	*Estimate (millions of United States dollars)*		*Productivity (P)/ efficiency (E)*
				Low range	*High range*	
Work effort in accounts processing travel claims	87.8 FTE[a]	10.6[b]	20-30	2.1	3.2	P
Work effort in processing accounts payable (commercial)	114.7 FTE[a]	13.9[b]	10-20	1.4	2.8	P
Work effort in processing internal inter-office vouchers and billing	22.8 FTE[a]	2.1[b]	50-75	1.1	1.6	P
Work effort in processing and reconciling external inter-office vouchers (mainly UNDP)	25.0 FTE[a]	1.4[b]	25-40	0.4	0.6	P
Budget review process	55.9 FTE[a]	8.9[b]	5-10	0.4	0.9	P
Work effort in completing the year-end closing	33.0 FTE[a]	5.2[b]	10-20	0.5	1.0	P
Average variance, positive or negative, between projected and actual cash flow	18 per cent[c]	0.55[d]	50-75	0.3	0.4	E
Total				**6.2**	**10.5**	

[a] The time currently required to complete activities was based on the outputs of the Umoja finance team surveys (February 2008 and June 2009) and the responses received from the United Nations Assistance Mission for Iraq, the United Nations Mission for the Referendum in Western Sahara, the International Trade Centre UNCTAD/WTO, the International Criminal Tribunal for Rwanda, the International Court of Justice, the Economic and Social Commission for Asia and the Pacific, the Economic and Social Commission for Western Asia, the Economic Commission for Latin America and the Caribbean, the Economic Commission for Africa, the United Nations Peacebuilding Support Office in the Central African Republic, the United Nations Integrated Office in Burundi, the United Nations Truce Supervision Organization, the United Nations Office at Vienna, the United Nations Office at Nairobi, the United Nations Observer Mission in Georgia, the United Nations Office at Geneva, the United Nations Mission in Liberia, the United Nations Interim Administration Mission in Kosovo, the United Nations Interim Force in Lebanon and the United Nations Disengagement Observer Force.

[b] Based on the weighted average full-time equivalents cost utilizing a cost per international full-time equivalents of $190,000 per annum, a cost per local full-time equivalent of $93,500 per annum and a cost per national full-time equivalent processing inter-office vouchers of $34,000 per annum. The weighted average accounts for the time taken by each resource category performing the activities related to the benefit.

[c] Average reported variance based on the Umoja finance survey.

[d] Estimated using the following assumptions: $25 million of uninvested funds globally (finance value survey) and a treasury return on investment of 2.2 to 3.0 per cent ($25 million x 2.2 per cent = 0.55 million).

Annex II

Objectives for the biennium, expected accomplishments, indicators of achievement and performance measures

Objective of the Organization: To unite numerous administrative entities throughout the Secretariat through simplified common human, financial and physical resource management processes, with built-in internal controls through consistent practices that are compliant with regulations, rules, policies and procedures through shared online data, renewed information management technology, and training for staff on all of the above.

Expected accomplishments of the Secretariat	Indicators of achievement
(a) Re-engineer business processes with built-in internal controls in compliance with regulations, rules, policies and procedures	(a) (i) Business processes (level III) designed or re-engineered in human resources, finance, supply chain and central support services *Performance measures* (Percentage of business processes designed or re-engineered) 2006-2007: not applicable Estimated 2008-2009: 50 per cent Target 2010-2011: 90 per cent (ii) Business processes (level III) built and tested in human resources, finance, supply chain and central support services *Performance measures* (Percentage of business processes built and tested) 2006-2007: not applicable Estimated 2008-2009: not applicable Target 2010-2011: 90 per cent
(b) Provision of technological systems	(b) Deployment of technological platforms and system performance *Performance measures* (System performance testing results) 2006-2007: not applicable Estimated 2008-2009: not applicable Target 2010-2011: better than 10-second response time per transaction step from user perspective in high-bandwidth environment

External factors

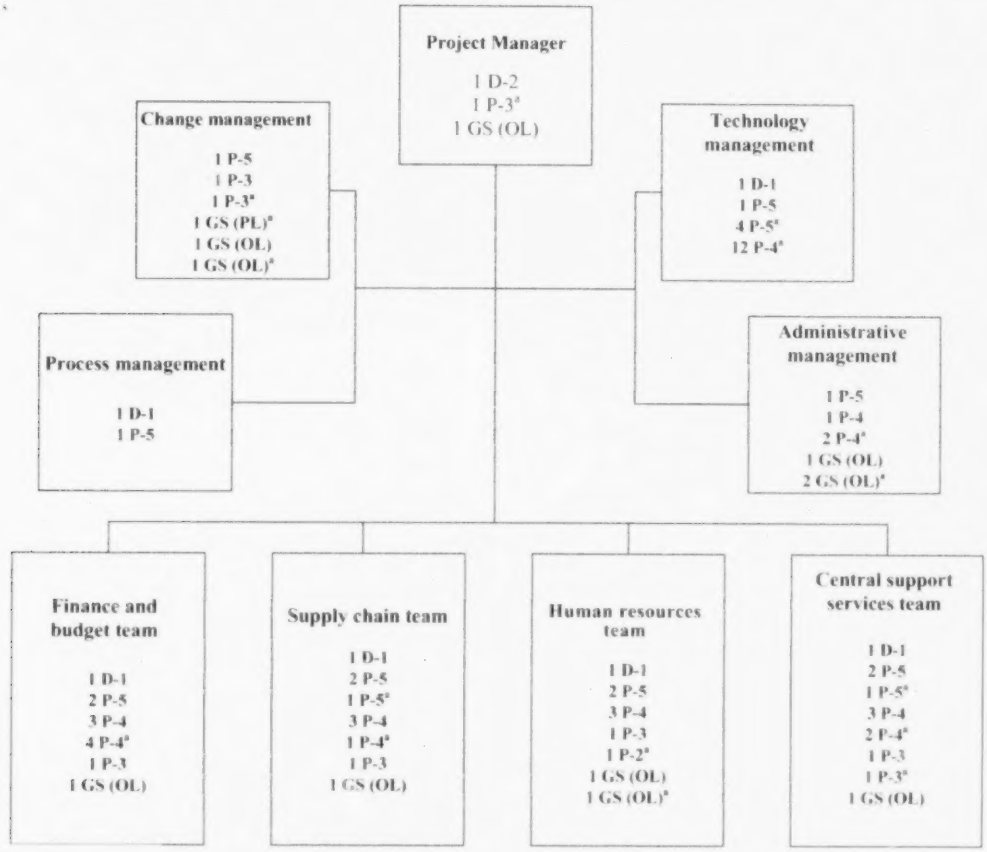
The objectives and expected accomplishments are expected to be achieved on the assumption that: (a) all vendors (systems integrator(s), strategic consultants, software, etc.) meet all contractual requirements; and (b) the software and technological systems meet all performance requirements.

Strategy

This subprogramme is the responsibility of the Umoja Enterprise Resource Planning Project Team in the Office of the Under-Secretary-General for Management. Umoja combines renewed techniques, tools, training and technology to improve the business practices of the United Nations Secretariat and to align them with commonly accepted best practices. The project will ensure that Umoja adequately responds to the needs of the Organization and facilitates the execution of its mandates by enabling the more efficient and effective management of resources (people, money and materials). The project will progress through four major phases: (a) preparation, (b) design, (c) build and (d) deployment. The principles that guide the design of the "business blueprint" or corporate operating model include: (a) the widest possible inclusion of subject matter experts (staff members recognized as leading practitioners in specific areas of the Organization); (b) complete coverage of all in-scope processes; (c) functional coverage of the approximately 500 legacy systems that will be replaced by Umoja's single global information system; and (d) effective interface between Umoja and the legacy systems that remain in place.

Annex III

Enterprise resource planning project: organizational structure and post distribution for the biennium 2010-2011



Abbreviations: GS, General Service; PL, Principal level; OL, Other level.

[a] New posts. All other posts reflect the proposed conversion from general temporary assistance funding.